

Claims

1. A layer arrangement, particularly for transfer films or laminated films, which exhibits at least two superposed layers of material, of which at least that (or those) facing the observer in use is or are transparent and between which an interface is formed which exhibits, at least in one area thereof, a diffractive optical structure producing some lens-like effect, either magnifying or de-magnifying,
characterized in that
the diffractive optical structure (4, 5, 6; 7, 8) producing the lens-like effect (the "lens structure") is designed such that the grating structure, including the line frequency and, as necessary, other grating constants, is varied continuously over the surface of the structure to form a binary structure (Fig. 1c) or some similar structure (Fig. 1b) in which one of the walls (5) of each grating groove run parallel to each other and approximately parallel to a perpendicular (S) to the principle plane of the interface layer, while the angle (α) of the other wall (4) of each grating groove relative to a perpendicular (S) to the principle plane of the interface layer (3) varies substantially continuously over the area of the lens structure, the grating depth (9) of the lens structures being not more than 10 μm .
2. A layer arrangement as defined in claim 1,
characterized in that
the layers (1, 2) adjacent the interface surface (3) are transparent and exhibit a different refraction index, preferably one differing by at least 0.2.
3. A layer arrangement as defined in claim 1,
characterized in that
the interface surface (3) is provided, at least in certain regions, with a reflectivity-enhancing layer.
4. A layer arrangement as defined in claim 3,
characterized in that

the reflectivity-enhancing layer is a metal layer.

5. A layer arrangement as defined in any one of the previous claims,
characterized in that
5 a number of lens structures (10, 11) are distributed over the area of the
layer arrangement.
6. A layer arrangement as defined in claim 5,
characterized in that
10 said multiple lens structures (10, 11) are arranged grid-wise.
7. A layer arrangement as defined in any one of the previous claims,
characterized in that
15 the lens structures (10) are substantially circular and have concentric grid
lines.
8. A layer arrangement as defined in any one of the previous claims,
characterized in that
20 the lens structures (10) have a diameter ranging from 0.15 to 300 mm,
preferably from 3 to 50 mm
9. A layer arrangement as defined in any one of the previous claims,
characterized in that
25 the grating depth (9) of the lens structures is less than 5 μm and prefera-
bly less than 2 μm .
10. A layer arrangement as defined in any one of the previous claims,
characterized in that
30 the binary structure (Fig. 1c) has approximately the same depth (9) over
the entire area of the lens structure (10).
11. A layer arrangement as defined in any one of the previous claims,
characterized in that

the transparent layer(s) facing the observer are colored without the use of pigments.